

BIOLOGICAL OPINION SUMMARY  
Mint Springs Analysis Area

**Date of opinion:** March 26, 1997

**Action agency:** U.S. Forest Service, Coconino National Forest, Mormon Lake Ranger District

**Project:** Mint Springs Analysis Area preferred alternative proposes to selectively thin trees 5 inches diameter at breast height (dbh) and greater on 3,894 acres. The Forest Service indicates that the smaller, suppressed, and diseased trees would be harvested to improve the growing conditions for the remaining trees. The entire analysis area with the exception of Mexican spotted owl (MSO) protected activity centers (PACs) is proposed for prescribed burning. Five MSO PACs are located wholly or partially within the analysis area. MSO restricted habitat comprises 1,305 acres of the 3,894 acres proposed for harvest.

**Location:** Coconino County, Arizona.

**Listed species affected:** Mexican spotted owl (*Strix occidentalis lucida*), a listed threatened species. Since critical habitat for the MSO has been enjoined by New Mexico District Court (Coalition of Arizona-New Mexico Counties for Stable Economic Growth versus USFWS, No. 95-1285-M Civil, filed March 4, 1997), no consultation or conferencing is required for critical habitat for this species.

**Biological opinion:** Nonjeopardy

**Incidental take statement:**

Level of take anticipated: Anticipated take of one MSO before the implementation of the reasonable and prudent measure is anticipated, associated with proposed harvest in MSO PAC 040423 in a manner not in compliance with the MSO Recovery Plan (USDI 1995). The Service believes that implementation of the term and condition will remove the potential for incidental take of MSO located in PAC 040423 in the project area. If, during the course of the action, this level of incidental take is exceeded (zero), such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reasonable and prudent measures: The biological opinion presents one measure for assisting in the reduction of incidental take: 1) The Forest Service shall conduct all proposed activities in a manner that is consistent with the recommendations of the MSO Recovery Plan and that will minimize modification and loss of MSO habitat in PACs. Implementation of the measure through the term and condition is mandatory.

Terms and conditions: One mandatory term and condition is included to implement the reasonable and prudent measure. The term and condition requires that the proposed treatment in stand 530-20 be dropped from the preferred alternative.

Conservation recommendations: Four conservation recommendations are provided. Implementation of these conservation recommendations are discretionary.



United States Department of the Interior  
Fish and Wildlife Service

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In Reply Refer To:

AESO/SE  
2-21-96-F-351

March 26, 1997

Mr. Fred Trevey  
Forest Supervisor  
Coconino National Forest  
2323 E. Greenlaw Lane  
Flagstaff, Arizona 86004

Dear Mr. Trevey:

The U.S. Fish and Wildlife Service (Service) has reviewed the project proposal for the Mint Springs Analysis Area located on the Mormon Lake Ranger District. Your July 9, 1996, request for formal consultation was received on July 17, 1996. This document represents the Service's biological opinion on the effects of the proposed action on the Mexican spotted owl (*Strix occidentalis lucida*) (MSO) in accordance with section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 *et seq.*).

According to the July 8, 1996, biological assessment and evaluation (BA&E) for the MSO, the Forest Service has determined that the preferred alternative "may effect, and is not likely to adversely affect" the MSO and its critical habitat. The Service is unable to concur with the Forest Service's determination of effect for the MSO. In an August 2, 1996, letter, the Forest Service provided a BA&E for the bald eagle. This BA&E made the determination that the proposed action "may effect, but is not likely to adversely affect" the bald eagle (*Haliaeetus leucocephalus*). Based on the changes requested by the Service and agreed to in writing by the Forest Service on February 4, 1997, the Service is able to concur with the determination for the bald eagle.

Since critical habitat for the MSO has been enjoined by New Mexico District Court (Coalition of Arizona-New Mexico Counties for Stable Economic Growth versus USFWS, No. 95-1285-M Civil, files March 4, 1997), no conferencing or consultation is required for critical habitat for this species.

This biological opinion is based on information provided in the July 8, 1996, BA&E for the MSO, the August 2, 1996, BA&E for the bald eagle, the July 1996, Mint Springs Environmental Assessment, and additional information requested by the Service and provided on January 8, 1997, February 20, 1997, February 25, 1997, and March 4, 1997, and conversations with Laurie Schaal and Heather Green, wildlife biologists, Rick Stahn, silviculturist, and Larry McCoy, fire management, at the Mormon Lake Ranger District, and other sources of

information. Literature cited in this biological opinion does not represent a complete bibliography of literature available on the MSO or the effects of habitat modification on the species, or other subjects that may have been considered in this opinion. A complete administrative record of this consultation is on file in the Arizona Ecological Services Field Office.

It is the Service's biological opinion that the preferred alternative for the Mint Springs Analysis Area is not likely to jeopardize the continued existence of the MSO.

## CONSULTATION HISTORY

Informal consultation on the Mint Springs Analysis Area began in December 1995. Informal consultation consisted of numerous conversations between Michele James of the Service and Heather Green and Laurie Schaal of the Mormon Lake District. These conversations dealt primarily with the implementation and interpretation of the Draft MSO Recovery Plan, and later, the Final MSO Recovery Plan (USDI 1995). A field visit was conducted on May 22, 1996, to discuss the proposed treatment of three aspen stands located in MSO protected activity centers (PACs). During informal consultation, the Service indicated that we would not be able to concur with a Forest Service determination of "may effect, not likely to adversely affect" the MSO, given the proposed action in at least two of the three stands. These informal consultation discussions led to the dropping of two of the three originally proposed aspen treatment stands (a total of 25 acres) located in MSO PACs. Knowing the Service might not concur with a determination of "may effect, not likely to adversely affect" the MSO, the Forest Service requested formal consultation for the MSO on June 9, 1996. The Forest Service made a determination that the proposed action "may effect, but is not likely to adversely affect" MSO critical habitat. On August 2, 1996, the Forest Service provided the Service with the Bald Eagle BA&E for this project, and requested that we provide concurrence or non-concurrence in the biological opinion being prepared for the MSO.

On December 3, 1996, the Service verbally discussed the proposed project with Laurie Schaal. Clarification of several points regarding effects to the MSO and its habitat occurred, and additional information was requested by the Service. Additional information requested included a burn plan and stand tables for the MSO "target" habitat stand. The Forest Service provided a written response to most of the additional information requested by the Service on January 8, 1997; a burn plan and stand tables were not received. On January 23, 1997, the Service discussed our concerns with the Forest Service regarding proposed silvicultural treatment and prescribed fire in and adjacent to stands containing a bald eagle perch site. On January 24, 1997, the Service received verbal notification that the treatments in these stands would be modified as requested. The Forest Service documented this in writing on February 4, 1997. The Service continued to request a burn plan and tables for the target stand throughout January and February. A draft burn plan was received on February 20, 1997. Some of the stand information requested for the target stand was provided to the Service on February 25, 1997. A meeting between the Service and Rick Stahn, Mormon Lake silviculturist occurred on March 4, 1997; the remaining requested information was received at that time. A second field visit was conducted by the Service and Laurie Schaal on March 23, 1997.

## BIOLOGICAL OPINION

### DESCRIPTION OF PROPOSED ACTION

The Mint Springs Analysis Area is located south of Mormon Lake, on the southern boundary of the Mormon Lake Ranger District. The Analysis Area is 15,581 acres in size including 350 acres of private land, and encompasses the southern one-third of T18N, R9E, the northern 3/4 of T17N, R9E, and Section 31 in T18N, R10E. Ponderosa pine, mixed conifer, aspen, or oak cover most the analysis area, with some juniper in the drier sites. Private communities in and around the analysis area include Bear Park, Long Park, Double Cabin Park, and the community of Mormon Lake. Recreationists use the analysis area throughout the year for camping, horseback riding, mountain biking, wagon rides, hunting, snowmobiling, and cross-country skiing.

According to the MSO BA&E, structural diversity in the analysis area is fairly low, with the area dominated by vegetative structural stage (VSS) 3 and 4 size classes. Nearly one-half (52 percent) of the forest acres in the analysis area have moderate ("B") canopy closure of 40-59 percent. One-third of the area (34 percent) has canopy closures of  $\geq 60$  percent. Fourteen percent of the area has low ("A") canopy closure ( $< 40$  percent). The Forest Service indicates that one of the primary objectives of the proposed project is to increase the amount of "A" canopy within forested acres over the entire analysis area so that a more equitable distribution of all three canopy categories is achieved, and so that fire can be re-introduced into the area.

The preferred alternative C would involve selective thinning of trees 5 inches diameter at breast height (dbh) and greater on 3,894 acres within the Mint Analysis Area. In some of these stands, trees less than 5 inches in diameter would be removed in a precommercial thinning operation. The Forest Service states that the proposed thinning would reduce the potential for the spread of wildfire, improve stand conditions, enhance wildlife habitats, and improve the landscape character of the area. According to the Environmental Assessment, in most areas, the smaller, suppressed, and diseased trees would be harvested to improve the growing conditions for the remaining trees. The larger, yellow-bark pines would be featured, and the spacing of residual trees would be variable. An estimated 50 yellow pine trees may be harvested depending on site-specific needs to reduce mistletoe. No trees greater than 24 inches in diameter would be cut in MSO restricted habitat as per the recommendations of the MSO Recovery Plan (USDI 1995). MSO restricted habitat comprises 1,305 acres of the 3,894 acres of proposed harvest. According to the Environmental Assessment, harvest prescriptions would include commercial thinning, group selection, salvage, or irregular shelterwood. Site specific prescriptions have not been determined as of this time (pers. comm. Rick Stahn, Mormon Lake silviculturist). In areas that were harvested under the Iowa Roundwood Sale, additional thinning is proposed to reduce stand densities and make the spacing between trees more variable.

The preferred alternative includes actions to improve the health of aspen stands. Within selected aspen stands, invading pine and fir would be removed, the aspen would be clearcut to encourage sprouting, broadcast burning would be used and/or the area would be fenced to protect the aspen

seedlings from elk or cattle. The treatments would be extended approximately 66 feet beyond the aspen clones to expand the stand. The exact combination of actions used in aspen stands would depend on the condition of the stands. One proposed aspen treatment stand is located with a MSO PAC.

The entire analysis area, with the exception of the MSO protected activity centers (PACs), is proposed for broadcast burning once the harvest and slash treatment activities are complete. PACs comprise 2,272 acres of the total analysis area. Burning would take between 5 and 10 years to complete and would generally occur during the late summer and early fall, but may also occur in the spring (Draft Mint Burn Plan, received February 20, 1997). Treatments of activity-generated slash will involve machine piling and lop and pile burning of 3,243 acres, and lop of 651 acres. Other actions proposed in the preferred alternative include road closures and actions to improve the conditions of dispersed recreation sites. Proposed road closures would reduce road densities to approximately 2.42 miles per section, from an existing level of approximately 3.3 miles per section. Signing and interpretation would be used to maintain or enhance resource conditions throughout the analysis area; specifically, seasonal/conditional road closure signs would be posted throughout the area on roads which remain open in an effort to reduce damage occurring to roads during wet weather conditions. One mile of an existing road would be converted to a trail. This road is located within a MSO PAC.

The Environmental Assessment indicates that the preferred alternative includes the following mitigation measures:

1. Filter strips will be used to protect stream courses. Filter strips are unharvested buffer areas along stream channels.
2. Equipment operation will be prohibited when soil conditions are such that rutting and compaction would likely occur. Potential for rutting or compaction would be determined by the Forest Service.
3. The purchaser will get approval from the Forest Service for landings, skid trails, and temporary road locations. This measure would prevent damage to live and dead residual trees, sensitive plant species, visual quality, sensitive soils, and recreation trails and sites during harvest operations.
4. All landings, temporary roads, and skid trails will be scarified and seeded after use. Waterbars will be created for all temporary roads and skid trails.
5. a. All activities will be prohibited within MSO PACs during the breeding season (March 1-August 31). In addition, activities will be prohibited during the MSO breeding season within 0.25 miles of known MSO nests or within 0.25 miles of PACs if the nest site is unknown.

b. Harvest-related activities will be coordinated for the following wildlife areas during breeding seasons:

1. Flammulated owl territories from April 15 to August 30,
2. Deer fawning and elk calving areas from May 15 to June 30,
3. Turkey nesting areas from April 15 to June 30, and
4. Bear maternity areas from April 15 to June 30.

c. Harvest-related activities would be prohibited within 50 feet of other known raptor nests.

6. An approved burn permit will be obtained from the Arizona Department of Environmental Quality (ADEQ) and a burn plan will be completed and approved prior to any broadcast burning. All burning will comply with ADEQ regulations. On a daily basis, ADEQ approval will be obtained for broadcast burning to minimize impacts to sensitive areas.
7. Warning signs will be posted on Forest Highway 3 during burning operations to alert motorists. In addition, the media will be notified.
8. In some areas, roads scheduled for closure or obliteration will remain open until after broadcast burning is completed.
9. Existing snags will be protected during harvest and slash treatment operations unless an individual tree is determined to be a safety hazard by the timber purchaser or his employees. All vegetative litter and slash will be pulled away from the base of all snags prior to broadcast burning.
10. High-use dispersed recreation sites will be identified prior to harvest operations. Slash piles will be located outside of these high-use recreations sites.
11. Wildlife cover will be maintained near permanent waters, tanks and springs.
12. Native grass species seed will be emphasized for rehabilitation work.
13. Slash will be piled in skid trails and other temporary pathways needed for harvest to prevent motor vehicle use, is slash is available and required to be piled. Slash piles will be burned in 1 to 2 years.

The Environmental Assessment indicates that the following monitoring will be conducted for the preferred alternative:

1. The Interdisciplinary Team will conduct an on-site evaluation of the sale for compliance with the Environmental Assessment within 1 year of the closure of the sale.

2. The Interdisciplinary Team will periodically review the project to determine if resource conditions in the Mint Analysis Area are approaching the desired conditions described in the Environmental Assessment and project record.
3. Silvicultural prescriptions and the accuracy of location boundaries will be checked on at least 10 percent of the area during sale preparation. If problems are found, they will be corrected and an additional 10 percent of the stands and boundaries will be checked.
4. The timber sale administrator and District hydrologist will monitor the implementation of Best Management Practices (BMPs) during and immediately after the timber sale harvesting activities. BMPs are listed in the project record and include such things as road closures and obliteration, grass seeding of disturbed areas, and stream course and filter strip protection. BMP effectiveness will be monitored approximately one year after the closure of the timber sale. Comparisons will be made between treated and untreated areas.
5. The District biologist will check proposed harvest areas adjacent to key wildlife areas or within areas with important wildlife implications (e.g. old growth) during marking and logging to assure that key objectives were met.
6. The effects of actions in both protected and restricted habitat will be monitored as per the MSO Recovery Plan. The monitoring strategy is outlined in detail in a letter from the Mormon Lake Ranger District to the Service dated January 8, 1997, and in the Draft Mint Burn Plan received by the Service on February 20, 1997.
7. The effectiveness of road closures and obliterations will be monitored periodically.
8. The effectiveness of aspen treatments will be monitored annually. The amount of regeneration and damage to new regeneration will be assessed.
9. Fuels reduction will be evaluated one year after broadcast burning. In particular, the effects of burning on snags, oaks and downed logs will be monitored.
10. Insect and disease aerial surveys will be conducted annually as part of the Arizona Zone Office of Entomology and Pathology's regular insect and disease detection program.

## STATUS OF THE SPECIES

### Species Description - Mexican Spotted Owl

A detailed account of the taxonomy, biology, and reproductive characteristics of the MSO is found in the Final Rule listing the MSO as a threatened species (58 FR:14248) and in the Final MSO Recovery Plan (USDI 1995). The information provided in those documents is included herein by reference.

Although the MSO's entire range covers a broad area of the southwestern United States and Mexico, much remains unknown about the species' distribution and ecology. This is especially true in Mexico where much of the MSO's range has not been surveyed. The MSO currently occupies a broad geographic area but does not occur uniformly throughout its range. Instead, it occurs in disjunct localities that correspond to forested isolated mountain systems, canyons, and in some cases, steep, rocky canyon lands. The primary administrator of lands supporting MSO in the United States is the U.S. Forest Service. Most owls have been found within Forest Service Region 3 (including 11 National Forest in Arizona and New Mexico). Forest Service Regions 2 and 4 (including 2 National Forests in Colorado and 3 in Utah) support fewer owls. According to the Recovery Plan, 91 percent of MSO known to exist in the United States between 1990 and 1993 occurred on lands administered by the Forest Service.

Surveys have revealed that the species has an affinity for older, well-structured forest, and the species is known to inhabit a physically diverse landscape in the southwestern United States and Mexico. The range of the MSO has been divided into six Recovery Units (RUs), as discussed in the MSO Recovery Plan (USDI 1995). The Recovery Plan reports an estimate of owl sites. An owl "site" is defined as a visual sighting of at least one adult owl or a minimum of two auditory detections in the same vicinity in the same year. This information was reported for 1990-1993. The greatest known concentration of known owl sites in the United States occurs in the Upper Gila Mountains RU (55.9 percent), followed by the Basin and Range-East RU (16.0 percent), Basin and Range-West RU (13.6 percent), Colorado Plateau RU (8.2 percent), Southern Rocky Mountain-New Mexico RU (4.5 percent), and Southern Rocky Mountain-Colorado RU (1.8 percent). Owl surveys conducted from 1990 through 1993 indicate that the species persists in most locations reported prior to 1989.

A reliable estimate of the absolute numbers of MSO throughout its entire range is not available (USDI 1995) and the quality and quantity of information regarding numbers of MSO vary by source. USDI (1991) reported a total of 2,160 owls throughout the United States. Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico.

At the end of the 1995 field season, the Forest Service reported a total of 866 management territories (MTs) established in locations where at least a single MSO had been identified (U.S. Forest Service, *in litt.* November 9, 1995). The information provided at that time also included a summary of territories and acres of suitable habitat in each RU. Subsequently, a summary of all territory and monitoring data for the 1995 field season on Forest Service lands was provided to the Service on January 22, 1996. There were minor discrepancies in the number of MTs reported in the November and January data. For the purposes of this analysis we are using the more recent information. Table 1 displays the number of MTs and percentage of the total number on each Forest (U.S. Forest Service, *in litt.*, January 22, 1996).

**Table 1.** Number of MTs as reported by the Forest Service (U.S. Forest Service, *in litt.*, January 22, 1996), percent of MTs as a proportion of the MTs in Forest Service Region 3, and the percent of suitable habitat surveyed in each Forest by National Forest (Fletcher and Hollis 1994).

National Forest	Number of MTs	Percent of MTs	Percent Suitable Habitat Surveyed
Apache-Sitgreaves	122	14.0	99
Carson	3	0.3	62
Cibola	43	5.0	41
Coconino	155	17.8	87
Coronado	108	12.4	49
Gila	197	22.7	50
Kaibab	6	0.7	96
Lincoln	126	14.5	90
Prescott	10	1.2	42
Santa Fe	33	3.8	44
Tonto	66	7.6	55
<b>TOTAL</b>	<b>869</b>	<b>100</b>	

The Forest Service has converted some MTs into PACs following the recommendations of the Draft MSO Recovery Plan released in March 1995. The completion of these conversions has typically been driven by project-level consultations with the Service and varies by National Forest.

The Mint Analysis Area is located within the Upper Gila Mountains RU as defined by the MSO Recovery Plan (USDI 1995). This RU is a relatively narrow band bounded on the north by the Colorado Plateau RU and to the south by the Basin and Range West RU. The southern boundary of this RU includes the drainages below the Mogollon Rim in central and eastern Arizona. The eastern boundary extends to the Black, Mimbres, San Mateo, and Magdalena Mountain ranges of New Mexico. The northern and western boundaries extend to the San Francisco Peaks and Bill Williams Mountain north and east of Flagstaff, Arizona. This is a topographically complex area consisting of steep foothills and high plateaus dissected by deep forested drainages. This RU can be considered a "transition zone," because it is an interface between two major biotic regions: the Colorado Plateau and Basin and Range Provinces (Wilson 1969).

Habitat within this RU are administered by the Kaibab, Coconino, Apache-Sitgreaves, Tonto, Cibola, and Gila National Forests. The north half of the Fort Apache and northeast corner of the San Carlos Indian Reservations are located in the center of this Recovery Unit and contain an important habitat link between owl subpopulations at the western and eastern ends of the RU and the subpopulations directly south within the Basin and Range West RU.

This RU consists of deep forested drainages on the Mogollon Plateau. Vegetation generally consists of pinyon/juniper woodland, ponderosa pine/mixed conifer forest, some spruce/fir forest, and deciduous riparian forest in the lower elevation canyon habitat. Climate is characterized by cold winters and over half the precipitation falls during the growing season. Much of the mature stand component contains accessible timber on the gentle slopes surrounding the canyons has been partially or completely harvested. Most of the forest habitat on steeper ground that may serve as nesting habitat is in suitable condition.

MSO are widely distributed and use a variety of habitats within this RU. Owls most commonly nest and roost in mixed-conifer forests dominated by Douglas fir and/or white fir and canyons with varying degrees of forest cover (Ganey and Balda 1989; USDI 1995). Owls also nest and roost in ponderosa pine-Gambel oak forest, where they are typically found in stands containing well-developed understories of Gambel oak (USDI 1995).

This RU contains the largest known concentration of MSO with approximately 55 percent of known MSO territories (USDI 1995). This RU is located near the center of the MSO's range within the United States and is contiguous to four of the other five RUs within the United States. Because of its central location and its large and relatively continuous spotted owl population, the MSO Recovery Team believes that the population in this RU could be uniquely important to the overall stability and persistence of the MSO population in the United States. Specifically, this population could serve as the source population, providing immigrants to smaller, more isolated populations in other RUs. Although the Recovery Team has no data on dispersal patterns or movements between RUs, the Recovery Team believes that this population should be maintained at current levels and with at least the current level of connectivity within the RU (USDI 1995). Significant discontinuities that develop in the MSO's distribution within this RU, and the loss of habitat to support the local sub-populations, may jeopardize the recovery of the species.

## ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the Act, when considering the effects of the action on Federally listed species, the Service is required to take into consideration the environmental baseline. Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects which have undergone section 7 consultation, and the impacts of State and private actions which are contemporaneous with the consultation in progress. On the Coconino National Forest, past and present Federal, State, private, and other human activities that affect this RU include numerous past timber sales, fuelwood gathering activities, cattle

grazing, development of recreation sites, road construction and maintenance activities, and oil and gas development.

The Forest Service has formally consulted on 164 timber sales and other projects in Arizona and New Mexico since August 1993. These projects have resulted in the anticipated incidental take, in various forms, of 40 owls. In addition, the Bureau of Indian Affairs has consulted on one timber sale on the Navajo Reservation which resulted in an anticipated take of four MSO, and a highway reconstruction which resulted in the anticipated incidental take of two MSO. The Federal Highway Administration has consulted on one highway project that resulted in an undetermined amount of incidental take.

## EFFECTS OF THE ACTION

### Mexican Spotted Owl

#### Actions in PACs:

A total of five MSO PACs lie partially or wholly within the boundaries of the Mint Springs Analysis Area (PAC numbers 040409, 040432, 040504, 040523, and 040524). The PACs were delineated based upon known nest and roost locations as identified by the MSO demography crew from Humboldt State University. Four of the five MSO pairs in this area were discovered after the contract was signed for the Smith Timber Sale in January 1989. In the expansion of the 450-acre management territory (MT) core areas to 600-acre PACs, as recommended in the MSO Recovery Plan (USDI 1995), some stands previously treated in the Smith Timber Sale are located within the PACs. The Forest Service indicates that due to the high density of owls in the area, the inclusion of previously treated stands could not be avoided. Harvest treatments in these stands were primarily selection cuts and included the removal of saw timber sized trees ( $\geq 12$  inches diameter at breast height). Stands in PACs and acreage treated during the Smith Timber Sale are as follows:

#### PAC 040523 (621 acres)

530-2	30 acres
530-3	28 acres
530-7	48 acres
530-20	<u>12 acres</u>
	118 acres

#### PAC 04032 (625 acres)

529-12	acres
529-14	31 acres
530-6	<u>86 acres</u>
	155 acres

#### PAC 040524 (638 acres)

531-9	52 acres
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#### PAC 040409 (700 acres)

531-12	115 acres
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Aspen treatment is proposed in stand 530-20, located within PAC 040523. This stand is 16 acres in size and is composed of aspen, ponderosa pine, mixed conifer, and Gambel oak. The Forest Service indicates that treatment of this stand is proposed in order to perpetuate the clones in this aspen stand. The Forest Service indicates that the aspen in this stand is rapidly declining in vigor and will likely disappear in the next 10-20 years due to intense competition by invading ponderosa pine and mixed conifer.

Information provided indicates that 12 acres of the 16-acre stand 530-20 were treated previously in the Smith Timber Sale. That treatment consisted of pine overstory removal. A site visit by the Service indicates that the stand is presently composed of large aspen, some pine of between approximately 6-10 inches dbh, and small fir. The area immediately surrounding stand 530-20 is composed of ponderosa pine up to approximately 14 inches dbh, some large oak, and some small fir. Proposed treatment of stand 530-20 would consist of cutting out all residual pine and mixed conifer within the stand, as well as the decadent aspen. A few of the largest trees of each species would be left in the stand. The 16 acres proposed for treatment are composed of the original 12 acres treated under the Smith Timber Sale, as well as an additional 4 acres comprised of a 66-foot buffer around the 12-acre aspen stand. The Forest Service states that this buffer is needed to encourage the expansion of aspen. The Forest Service indicates that pine and mixed conifer trees up to 12 inches dbh would be removed; also aspen trees both inside the original 12-acre stand and within the 66 foot buffer. Trees of this size or less are basically all that are left in the stand. All oak would be retained, as well as all snags that do not pose a significant threat to fuelwood gatherers. The cut trees would be sold as fuelwood so that road improvements would not have to be made within the PAC for larger equipment to operate. The road to access this stand would be closed following use. All treatment, including use by woodcutters in this stand and fencing, would occur outside the MSO breeding season (pers. comm. Laurie Schaal).

Stand 530-20 is located approximately 0.5 miles from the 1994 MSO nest site for PAC 040423, and further from the other two nest locations known to have been used in this PAC. This pair of MSO produced young in 1991, 1993, and 1995. Stand 530-20 is located at the southern edge of PAC 040423, and is immediately adjacent to PAC 040432. The nearest recorded location of MSO to stand 530-20 provided to the Service occurred in 1996, when the pair from the adjacent PAC (040432) were located in stand 530-1, located approximately 0.25 miles from stand 530-20. Stand 530-1 is adjacent to both PAC 040423 and PAC 040432. Despite the fact that a MSO has been recorded nesting in an aspen cavity on the Forest, the Service does not believe stand 530-20 provides nesting quality habitat due to its open nature. The Service believes that while a fairly open, stand 530-20 may provide foraging habitat for the MSO due to the presence of trees within the stand which provide perches for the MSO. In addition, the Service believes this stand may provide foraging habitat for the MSO due to its proximity to the core areas of use of the MSO in PACs 040423 and 040432, and due to the generally poor condition of much of the habitat in these PACs outside the core areas of use.

The Service does not believe that the proposed treatment of stand 530-20 is in compliance with the Recovery Plan (USDI 1995) for two reasons: 1) proposed treatment will remove trees up to 12 inches dbh from within the PAC. The Recovery Plan specifically recommends that treatments in PACs do not remove trees greater than 9 inches dbh. Based on a field visit, the Service recognizes that the number of trees over 9 inches removed may be relatively small. Because no specific numbers were provided by the Forest Service, the Service is unable to determine the scale of the removal of trees over 9 inches. 2) The proposed treatment does not meet the intent of the Recovery Plan for treatments within PACs. The Recovery Plan recommends that harvest of trees in PACs occur only as it pertains to appropriate treatments to reduce fire risk. The treatment of aspen in a PAC does not fall within that definition. The Service is aware of the concerns for losing aspen on the Forest, and we agree with the overall need to perpetuate aspen clones. However, in general, the Service does not believe aspen treatments of this size should occur in PACs until recovery of the MSO has been achieved. The Service does not believe the need to treat aspen at this time as proposed in stand 530-20 outweighs the potential adverse effects to the MSO.

In addition to the proposed action not meeting the letter or intent of the Recovery Plan, the Service does not believe that the creation of a 16 acre opening in the PAC is conducive to managing for the MSO. The Service believes that an opening of this size will effectively remove a portion of the PAC currently available for foraging. The Recovery Plan (USDI 1995) indicates that the method of aspen regeneration as proposed in stand 530-20 is indistinguishable in appearance from clearcutting, an even-age method of silviculture. Even-age stand structures are not used to any great extent by the MSO (USDI 1995). Ganey and Balda (1994) showed very low use of non-forested habitat by foraging MSO. The extent to which MSO are preyed upon is unknown at this time, although there is evidence of predation of MSO by great-horned owls and goshawks which generally prefer open habitat (USDI 1995). Therefore, an opening of this size in a PAC may increase the vulnerability of MSO to predators. The Service's concerns for the MSO are related to the short-term effects to foraging habitat, both on the ability of the MSO to forage in the stand, and to the effect of the proposed treatment on prey species. The effects of the proposed aspen treatment on MSO prey species is not known. The Recovery Plan (USDI 1995) indicates that further research is needed to determine the cause-effect relationship of tree removal on MSO prey populations. The Recovery Plan also states that until these experiments are conducted, effects of tree removal on prey habitat and populations must be based on speculation and conjecture. Therefore, the Service is taking a conservative approach regarding the effects to MSO prey of the removal of trees within stand 530-20.

The Service's concern for the loss of foraging habitat in the PAC is further reinforced when the cumulative effects of past vegetative treatments in PAC 040423 are reviewed. Silvicultural treatments have occurred on 118 acres of this PAC in the Smith Timber Sale (19 percent of the PAC acres). The residual condition of the treated stands in all PACs are described by the Forest Service as generally having high canopy closure and some multi-storiedness (January 8, 1997, letter from the Mormon Lake Ranger District). The Service conducted a site visit to the previously treated stands in PAC 040423 and we do not agree that these stands, in the areas visited, have high canopy closure. The treatment of these 118 acres has reduced the quality of

this habitat to the point where it is likely to only be used by MSO for foraging. The Service understands that in the drawing of this PAC, the Forest Service had little higher quality habitat to choose from in adjacent stands and we agree with the logic of adding these acres at the south end of the PAC so that this PAC is connected to the adjacent PAC 040432. Given the existing condition of previously treated stands in PAC 040423, the Service believes it may be more beneficial to the MSO for the aspen stand (530-20) to be replaced by conifers. This may allow MSO nest/roost habitat to develop with time (USDI 1995). The Service believes the proposed treatment of stand 530-20 may adversely affect the MSO in PAC 040423.

#### Target and Restricted Habitat:

The level of information provided in the Mint Springs project description presents an extraordinarily broad description of actions which may occur in restricted habitat. The Forest Service indicates that silvicultural prescriptions may include commercial thinning, group selection, salvage, or shelterwood harvests. With a scope of implementation as broad as this, and without site specific prescriptions of even limited detail, it is more difficult for the Service to evaluate the proposed action and to determine the effects to the MSO and its habitat. Proposed actions submitted for consultation need to contain a complete project description so that an adequate evaluation can be completed by both the Forest Service and the Service.

The Mint Springs Analysis Area contains 3,473 acres of restricted pine/oak habitat. No stands meet threshold habitat conditions. The Forest Service has designated stand 487-2 (360 acres) as target habitat (just over 10 percent of the restricted habitat in the Analysis Area). The Forest Service indicates that this stand will be managed towards threshold habitat as specified in the Recovery Plan. This stand was selected as a target stand because of its size, its high basal area, the number of large trees present (8 trees > 18 inches dbh), and its component of Gambel oak (12 percent of the basal area). Proposed thinning in this stand is designed to move the stand toward threshold habitat conditions as quickly as possible. Because the stand is composed primarily of trees between 5 and 12 inches dbh, treatment will consist of thinning from below to a residual basal area of 80 square feet. The Forest Service indicates that the stand could be expected to develop a stand basal area of 120 square feet in approximately 30 years. The maximum stand density index (SDI) figures for stand 487-2 over time are presented below (Rick Stahn, Mormon Lake silviculturist, March 4, 1997):

	<u>12-17.9"</u>	<u>18-23.9"</u>	<u>24" +</u>
Present	9.2	3.8	2.2
Post-treatment (year 1)	9.2	3.8	2.2
Year 2025	14.3	4.4	2.9

The above numbers differ from those presented in the July 8, 1996, BA&E for the MSO. The differences were not explained to the Service, thus the Service has used the most recently presented numbers. Inconsistencies in silvicultural data presented by the Forest Service in this consultation concern the Service greatly, as well as the lack of timely response to requests for basic information for the proposed action. This target stand is currently far from threshold habitat conditions, and in 30 years it will still not meet the 10 percent SDI required for the three size classes. The Service understands that this stand presented the best target habitat in the analysis area, but wishes to point out that this is a good example of why a landscape level analysis for target/threshold habitat should be completed; a landscape analysis may have indicated that no stands outside of PACs within the Mint Analysis Area were approaching threshold habitat, but stands in an adjacent analysis area may contain more than the required 10 percent in threshold or target condition.

The BA&E indicates that treatment in the target stand will consist of thinning trees between 5 and 12 inches dbh, and that trees between 18 and 24 inches dbh may be removed from this stand if heavily infested with mistletoe and overtopping saplings. The letter from the Forest Service dated January 8, 1997, contradicts these earlier statement and indicates that treatment in this stand will not harvest trees over 18 inches dbh, and that the bulk of the trees removed would be between 12 and 17.9 inches dbh. Clarification of this point was not received. Based on review of the stand table, the Service assumes that the information provided in the BA&E is correct, and that the majority of trees removed in this stand will consist of trees between 5 and 12 inches dbh.

The Service recommends that thinning occur from below and that no trees 18 inches dbh or greater be removed from this stand even if heavily infected with mistletoe. If heavily mistletoed trees are present in this stand, the Service recommends that alternative treatment be used, such as thinning saplings from around these trees to prevent mistletoe spread. The Service recommends this given that the Recovery Plan recommends moving target stands toward threshold habitat as quickly as possible, and that the trees 18 inches and larger take the longest time to grow, therefore, they should not be removed.

The Forest Service has indicated that no trees over 24 inches dbh will be removed in restricted habitat, therefore the treatments within restricted habitat are in compliance with the Recovery Plan (USDI 1995).

In addition, the Forest Service has committed to conducting the Region's pre-and post treatment microhabitat monitoring standards for silvicultural treatments, as well as monitoring of aspen treatments. These actions are detailed in the January 8, 1997, letter from the Forest Service.

#### Prescribed Burning:

All PACs will be excluded from prescribed fire treatments in the preferred alternative. The Forest Service provided a Draft Burn Plan for Mint Springs (dated February 5, 1997). The Burn Plan indicates that during burning operations snags will be protected by removing slash and duff

from around the bases. Down logs will be protected by lifting fuel torches and not burning "islands" within the burn blocks. These "islands" may be between 0.25 to 2 acres in size. Prescribed fire will be kept out of PACs by utilizing control lines consisting of existing roads, constructed dozer lines, hand line, and natural barriers. The lines closest to PACs will be patrolled by at least one engine with water to ensure that any spot fires are extinguished rapidly. All burning near PACs will occur outside the MSO breeding season. The Forest Service has committed to completing Region-wide or Forest-wide prescribed fire microhabitat monitoring if available by the time of implementation. If such a plan is not available, the Forest Service has presented an interim monitoring plan in their January 8, 1997, letter that the Service finds satisfactory. Given the above descriptions and mitigation measures, the Service does not believe prescribed fire will adversely affect the MSO or its habitat.

#### Recent Information on MSO:

The Forest Service has indicated that the MSO pair from PAC 040432 were located in stand 530-1 on June 12, 1996, by the demography crew. Stand 530-1 is located outside and adjacent to PAC 040432. The visual location occurred at night, when it is presumed the MSO were foraging. On the following evening, the demography crew located this pair of MSO in their traditional roost area within the PAC. Wildlife personnel felt that a pair of MSO located outside a designated PAC has the potential to be biologically significant depending on how owls use that area. Although wildlife personnel believe the MSO were called into stand 530-1, the Forest Service indicates that the inclusion of this stand into PAC 040432 would be beneficial. Given that some form of silvicultural treatment is proposed in stand 530-1, and given that the prescription is not yet written, it is impossible for the Service to determine if the effects of that treatment would be detrimental to the use of the stand by MSO. After a field visit to PAC 0404023, the Service strongly recommends that the Forest Service take the advice of their biologists and add this stand to PAC 040432.

#### Roads in PACs:

The Forest Service indicates that the preferred alternative will obliterate 5.7 miles of the currently existing 8.1 miles of road located in the five PACs. The Service strongly approves of this action and believes it will benefit the MSO by assisting in the reduction of disturbance to MSO as well as the potential for fuelwood theft. One mile of road will be converted to trail within PAC 040504. According to the January 8, 1997, letter received from the Forest Service, the top of this road/trail is located in close proximity to one of the two MSO nest locations in this PAC. The Forest Service indicates that the nest locations in this PAC are concealed by dense mixed conifer vegetation. The Forest Service indicates that closure of the road would decrease overnight car camping and decrease the number of visits by all terrain vehicles and other motorized travel. The Forest Service states that the road currently receives little recreational use, and does not anticipate an increase in recreational use of this road/trail. The Forest Service describes recreational use of the trail to consist of an occasional backpacker and daytime visits to the lookout. No plans exist for future developed recreational use of this area.

The Service believes that recreational trails have the potential to adversely affect MSO if located within a PAC, particularly in close proximity to nest/roost sites. The Service recommends that the Forest Service informally monitor use of this trail by recreationists over time, and that the biologist assess on a yearly basis if recreation use is at a level to warrant further consultation.

## CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local or private actions that are reasonably certain to occur in the action area considered in the foreseeable future. Future Federal actions are subject to the consultation requirements established under section 7, and, therefore, are not considered cumulative in the proposed action. In past Biological Opinions, it has been stated that, "Because of the predominant occurrences of the MSO on Federal lands, and because of the role of the respective Federal agencies in administering the habitat of the MSO, actions to be implemented in the future by non-Federal entities on non-Federal lands are considered of minor impact." However, there has been a recent increase of harvest activities on non-Federal lands within the range of the MSO. In addition, future actions within or adjacent to the Forest Service lands that are reasonably expected to occur include urban development, road building, land clearing, logging, fuelwood gathering, ~~potential oil and gas leasing~~, and other associated actions. These activities reduce the quality and quantity of MSO nesting, roosting, and foraging habitat, cause disturbance to breeding MSO and would contribute as cumulative effects to the proposed action.

## CONCURRENCES

On January 23, 1997, the Service discussed our concerns with Heather Green, wildlife biologist, regarding the proposed use of prescribed fire in a bald eagle perch site (stands 480-3, 8, 15, and 21), and the proposed silvicultural treatments in stands 480-8 and 15 within close proximity to the same bald eagle perch. On January 24, 1997, the Service received verbal notification that the proposed treatments in these two stands had been modified as the Service had verbally recommended. The Forest Service put this commitment into writing in a letter to the Mint project record dated February 4, 1997. The Forest Service has agreed to exclude stands 480-3, 4, 15, and 21 from prescribed fire treatment to protect the bald eagle perch. In addition, the Forest Service has agreed that the District will coordinate during the writing of the prescription and marking of stands 480-8 and 15 to assure that any perch trees that fall within treated stands are protected. Based on the above changes, the Service is able to concur with the Forest Service's determination that the proposed action "may effect, but is not likely to adversely affect" the bald eagle or its habitat.

## CONCLUSION

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Mint Analysis Area, as proposed, is not likely to jeopardize the continued existence of the MSO.

## INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Forest Service has a continuing responsibility to regulate the activity covered by this incidental take statement. If the Forest Service (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

For the purposes of consideration of incidental take of MSO by the proposed action under consultation, incidental take can be broadly defined as either the direct mortality of individual birds, or the alteration of habitat that affects the behavior (i.e. breeding or foraging) of birds to such a degree that the birds are considered lost as viable members of the population and thus "taken." They may fail to breed, fail to successfully rear young, raise less fit young, or desert the area because of disturbance or because habitat no longer meets the owl's needs.

In past Biological Opinions, the management territory was used to quantify incidental take thresholds for the MSO (see Biological Opinions provided by the Service to the Forest Service from August 23, 1993 to date). The current section 7 consultation policy provides for incidental take if an activity compromises the integrity of a PAC. Actions outside PACs will generally not be considered incidental take, except in cases when areas that may support owls have not been adequately surveyed.

Using available information as presented within this document, the Service has identified conditions of probable take for the MSO associated with PAC 040423. Based on the best available information concerning the MSO, habitat needs of this species, the project description, and information furnished by the Forest Service, take is considered likely for the MSO as a result of the following:

- 1) Harvest will occur within PAC 040423 in a manner not in compliance with the letter or the intent of the recommendations of the MSO Recovery Plan (USDI 1995).
- 2) The impacts of the proposed harvest would result in loss of foraging habitat in a PAC where a combination of past treatment of 118 acres and natural vegetative and topographic features do not allow the inclusion of additional quality habitat.

#### AMOUNT OR EXTENT OF TAKE

The Service anticipates that the Mint Analysis Area proposed action may result in the incidental take of one MSO connected with PAC 040423 in the form of harm and harassment due to habitat modification and disruption of normal behavior.

#### EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the MSO.

#### REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize take.

- 1) The Forest Service shall conduct all proposed activities in a manner that is consistent with the recommendations of the MSO Recovery Plan and that will minimize modification and loss of MSO habitat in PACs.

#### TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of ESA, the Forest Service must comply with the following term and condition, which implements the reasonable and prudent measure described above. This term and condition is nondiscretionary.

- 1.1 The Forest Service shall drop the proposed treatment of stand 530-20 from the preferred alternative.

The reasonable and prudent measure, with its implementing term and condition, is designed to minimize incidental take that might otherwise result from the proposed action. The Service believes that implementation of this term and condition will remove the potential for incidental take of MSO located in PAC 040423 in the project area. If, during the course of the action, this level of incidental take is exceeded (zero), such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Notice: While the incidental take statement provided in this consultation satisfies the requirements of the Endangered Species Act, as amended, it does not constitute an exemption from the prohibitions of take of listed migratory birds under the more restrictive provisions of the Migratory Bird Treaty Act.

### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Add stand 530-1 to PAC 040432 as previously recommended by District wildlife biologists prior to implementation of the Mint preferred alternative. Do not treat this stand either silviculturally or with prescribed fire without further consultation with the Service.
2. Ensure that a wildlife biologist has input on the ground when marking stands 480-8 and 15, to ensure that the important elements of the bald eagle perch site are not affected by the prescription.
3. Informally monitor the trail located within PAC 040504 to ensure that recreational use is not affecting the MSO. If the wildlife biologist believes recreational use is affecting the MSO in this PAC, initiate consultation with the Service.
4. Do not remove trees 18 inches dbh or larger from target stand 487-2. This will assist in the maintenance of the harder to reach habitat components of threshold habitat. The Service suggests that if mistletoe is considered a problem in the larger trees in this stand, that alternative treatments be used.
5. Proposed actions submitted for consultation need to present a complete project description so that the effects to the MSO and its habitat can be determined. All proposed actions should meet the letter and intent of the MSO Recovery Plan (USDI 1995). Specifically, in future consultations for actions in target/threshold habitat, provide the Service with stand tables indicating current conditions, conditions after treatment, and modeling indicating stand conditions in 20-30 years. If prescribed burning is proposed in protected and/or restricted habitat, provide the Service with a draft burn plan or the equivalent information.

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